

1 We claim:

2  
3 1. A metal sheet punch device for use with metal sheeting  
4 for roofs, ceilings and walls comprising:

5  
6 a longitudinally extended frame having forward and rearward ends;

7  
8 alignment means mounted on said frame adjacent said forward and  
9 rearward ends for aligning said frame on a metal sheet;

10  
11 at least two metal punch devices mounted on said frame, each of  
12 said metal punch devices including;

13  
14 a metal punch support structure movably mounted on said frame,  
15 said metal punch support structure movable between a  
16 retracted position and an extended position relative to  
17 said frame;

18  
19 a metal punch having a pointed lower end, said metal punch  
20 mounted on the underside of said metal punch support  
21 structure;

22  
23 support structure drive means mounted on said frame and  
24 operatively connected to said metal punch support  
25 structure to move said metal punch support structure  
26 between said retracted position and said extended  
27 position; and  
28

1 trigger means operatively connected to said at least two metal  
2 punch devices, said trigger means operative to trigger said  
3 support structure drive means to drive each of said metal  
4 punch support structures from said retracted position to said  
5 extended position such that said metal punches each engage a  
6 metal sheet on which said metal sheet punch device is  
7 positioned and form at least two indentations in the metal  
8 sheet by impact of said metal punches with the metal sheet.  
9

10 **2.** The metal sheet punch device of claim 1 wherein said  
11 longitudinally extended frame comprises a pair of generally  
12 parallel frame plates spaced from one another and supported apart  
13 from and connected to one another by a plurality of spacer rods.  
14

15 **3.** The metal sheet punch device of claim 1 wherein said  
16 alignment means mounted on said frame adjacent said forward end  
17 comprises at least one mounting arm extending forwards and  
18 downwards from said frame, an alignment plate mounting bar mounted  
19 on the forward end of said at least one mounting arm and an  
20 alignment plate mounted on said alignment plate mounting bar  
21 including a screw engagement slot formed in the forward end of said  
22 alignment plate, said screw engagement slot operative to fit over  
23 and engage a securement screw which has already been mounted in the  
24 metal sheet thereby aligning the forward end of said frame with an  
25 already positioned securement screw.  
26

27 **4.** The metal sheet punch device of claim 1 wherein said  
28 alignment means mounted on said frame adjacent said rearward end

1 comprises a pair of downwardly depending rear alignment bars  
2 mounted on opposite sides of said frame and extending downward  
3 below the base of said frame such that when said frame is placed on  
4 a metal sheet, said rear alignment bars are positioned outside of  
5 the edge of the metal sheet to depend downwards over the underlying  
6 roof frame beam on which the metal sheet is to be mounted, thereby  
7 aligning the rearward end of said frame with the underlying roof  
8 frame beam.

9  
10       **5.** The metal sheet punch device of claim **1** wherein said  
11 metal punch support structure of each of said at least two metal  
12 punch devices comprises at least one punch support bar having a  
13 rearward end pivotably mounted on said frame, said metal punch  
14 mounted on a forward end of said at least one punch support bar.

15  
16       **6.** The metal sheet punch device of claim **1** wherein said  
17 support structure drive means of each of said at least two metal  
18 punch devices comprises a spring.

19  
20       **7.** The metal sheet punch device of claim **1** wherein said  
21 support structure drive means of each of said at least two metal  
22 punch devices comprises a pneumatic piston.

23  
24       **8.** The metal sheet punch device of claim **1** wherein said  
25 support structure drive means of each of said at least two metal  
26 punch devices comprises an hydraulic ram.

27  
28       **9.** The metal sheet punch device of claim **1** wherein each of

1 said at least two metal punch devices further comprise an actuating  
2 arm mounted on and extending outwards from said metal punch support  
3 structure, said actuating arm including an L-shaped slot formed  
4 therein.

5  
6 **10.** The metal sheet punch device of claim 9 wherein said  
7 trigger means comprises a trigger actuating arm movably mounted on  
8 said frame, a trigger bar rotatably mounted on said frame and  
9 operatively connected to said trigger actuating arm and an  
10 actuating arm bolt housed within said L-shaped slot of said  
11 actuating arm, said actuating arm bolt operative slide within said  
12 L-shaped slot and alternatively frictionally and mechanically  
13 engage and release to trigger said support structure drive means to  
14 drive said metal punch support structure from said retracted  
15 position to said extended position to impact a metal sheet section  
16 to create a securement screw indentation.

17  
18 **11.** The metal sheet punch device of claim 1 wherein said  
19 trigger means is operative to generally simultaneously trigger each  
20 of said at least two metal punch devices.

1       **12.** A metal sheet punch device for use with metal sheeting  
2 for roofs, ceilings and walls comprising:

3  
4 a longitudinally extended frame having forward and rearward ends;  
5  
6 forward and rearward alignment means mounted on said frame adjacent  
7       said forward and rearward ends for aligning said frame on a  
8       metal sheet;

9  
10 at least two metal punch devices mounted on said frame, each of  
11       said metal punch devices including;

12  
13       a metal punch support structure movably mounted on said frame,  
14       said metal punch support structure movable between a  
15       retracted position and an extended position relative to  
16       said frame;

17  
18       a metal punch having a pointed lower end, said metal punch  
19       mounted on the underside of said metal punch support  
20       structure;

21  
22       spring means mounted on said frame and connected to said metal  
23       punch support structure to rapidly and forcefully move  
24       said metal punch support structure between said retracted  
25       position and said extended position; and

26  
27 trigger means operatively connected to said at least two metal  
28       punch devices, said trigger means operative to trigger said

1 spring means to drive each of said metal punch support  
2 structures from said retracted position to said extended  
3 position such that said metal punches each engage a metal  
4 sheet on which said metal sheet punch device is positioned and  
5 form at least two indentations in the metal sheet by impact of  
6 said metal punches with the metal sheet.

7  
8 **13.** The metal sheet punch device of claim **12** wherein said  
9 longitudinally extended frame comprises a pair of generally  
10 parallel frame plates spaced from one another and supported apart  
11 from and connected to one another by a plurality of spacer rods.

12  
13 **14.** The metal sheet punch device of claim **12** wherein said  
14 alignment means mounted on said frame adjacent said forward end  
15 comprises at least one mounting arm extending forwards and  
16 downwards from said frame, an alignment plate mounting bar mounted  
17 on the forward end of said at least one mounting arm and an  
18 alignment plate mounted on said alignment plate mounting bar  
19 including a screw engagement slot formed in the forward end of said  
20 alignment plate, said screw engagement slot operative to fit over  
21 and engage a securement screw which has already been mounted in the  
22 metal sheet thereby aligning the forward end of said frame with an  
23 already positioned securement screw.

24  
25 **15.** The metal sheet punch device of claim **12** wherein said  
26 alignment means mounted on said frame adjacent said rearward end  
27 comprises a pair of downwardly depending rear alignment bars  
28 mounted on opposite sides of said frame and extending downward

1 below the base of said frame such that when said frame is placed on  
2 a metal sheet, said rear alignment bars are positioned outside of  
3 the edge of the metal sheet to depend downwards over the underlying  
4 roof frame beam on which the metal sheet is to be mounted, thereby  
5 aligning the rearward end of said frame with the underlying roof  
6 frame beam.

7  
8 **16.** The metal sheet punch device of claim **12** wherein said  
9 metal punch support structure of each of said at least two metal  
10 punch devices comprises at least one punch support bar having a  
11 rearward end pivotably mounted on said frame, said metal punch  
12 mounted on a forward end of said at least one punch support bar.

13  
14 **17.** The metal sheet punch device of claim **12** wherein each of  
15 said at least two metal punch devices further comprise an actuating  
16 arm mounted on and extending outwards from said metal punch support  
17 structure, said actuating arm including an L-shaped slot formed  
18 therein.

19  
20 **18.** The metal sheet punch device of claim **17** wherein said  
21 trigger means comprises a trigger actuating arm movably mounted on  
22 said frame, a trigger bar rotatably mounted on said frame and  
23 operatively connected to said trigger actuating arm and an  
24 actuating arm bolt housed within said L-shaped slot of said  
25 actuating arm, said actuating arm bolt operative slide within said  
26 L-shaped slot and alternatively frictionally and mechanically  
27 engage and release to trigger said support structure drive means to  
28 drive said metal punch support structure from said retracted

1 position to said extended position to impact a metal sheet section  
2 to create a securement screw indentation.

3  
4       **19.** The metal sheet punch device of claim **12** wherein said  
5 trigger means is operative to generally simultaneously trigger each  
6 of said at least two metal punch devices.